Cerveceria Cuauhtemoc Moctezuma

Location: Sonora
Type: Energy efficiency
Size: 3,700,000 kWh annual savings
Funding: Total: US$175,000
Private: US$175,000
Objective: To reduce plants' energy needs by regulating electric load.
Duration: 1998–1999
Scale: Urban

Summary

This privately financed project used various energy-efficiency improvements to reduce peak demand at a large Mexican brewery. Significant savings have resulted during the summer months (roughly US$21,000 per month) when peak electricity demand increases by six times over winter months due to product refrigeration requirements. In addition, carbon dioxide (CO_2) offsets resulting from the efficiency improvements are estimated at more than 5,000 tons during the life of the project. The performance contracting approach helped secure reasonably priced financing, and transferring carbon rights from the project to investors helped offset financing costs and mitigate the risks of new financing methods.

In-Country Principles That Attracted Nondonor Financing

- Capacity building and informed decision making

A key factor that attracted private-sector interest was the ability of the plant to operate under standard commercial practices. Activities that helped bring the plant in line with standard commercial practices include having a management team independent of the government, improved cost recovery, and metering systems. Also important were the increased awareness, knowledge, and skills of sector professionals in technical areas such as commercial business practices, cost-based pricing, and competitive energy market operations.

Financing

Total project investment was US$175,000. The project was structured as a shared savings, performance-type contract, with quarterly lease payments made by the brewery to an energy services company, Empresas ESM SA de CV, on the basis of actual savings measured by the brewery. The five-year contract stipulates that Empresas will receive a percentage of the savings generated by the project over a number of years, with the brewery obtaining the remaining benefits generated. At the end of the contract period, the brewery receives 100% of the benefits generated.

The contract also assigns carbon offsets generated by the project to Empresas, which in turn, shares ownership of the carbon credits with Econergy International Corporation (EIC), a private United States (US) participant, that provided subordinated debt financing, financial advisory services, and technical services related to greenhouse gas (GHG) emissions. The additional potential value of carbon offsets derived from the project enables the brewery owner to obtain the services of EIC as an "in-kind" contribution to the project. In addition, in anticipation of the future value of the carbon credits, EIC carried many of the transaction costs, accelerating financial closure, which otherwise would have been difficult to complete.

Performance contracting allowed the brewery to budget for regular lease payments as part of its operations and maintenance budgets, without an up-front outlay of capital. The approach also allows the project developers (in this case EIC and Empresas) to "own" the carbon credits generated by the project as a concession for the reasonably priced financing. The carbon credits will be aggregated into a larger package attractive to potential buyers interested in bulk carbon credit purchases.

The Project

An energy services company, Empresas ESM SA de CV, in association with a private US firm, EIC, implemented an energy-efficiency performance contract with one of Mexico's largest beer companies, Cerveceria Cuauhtemoc Moctezuma (CCM). The project includes energy-efficiency measures to

improve electricity load management during peak hours. Total peak demand is reduced by using electrical equipment for process cooling on a sequential or staggered schedule rather than simultaneously and continuously. Brewing process efficiency measures were also installed.

Technical Data

Technologies included controls on motors, fans, pumps, and other electric devices, as well as improving the efficiency of backup cooling systems.

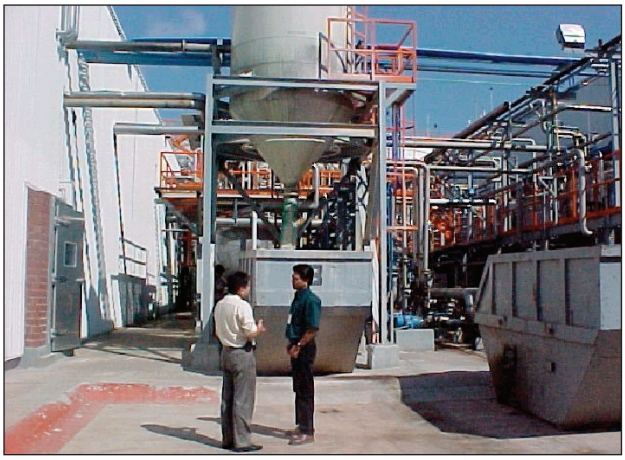
Performance Data

The energy-efficiency improvements have produced energy, emissions, and economic savings that include the following: annual energy savings of 3,775,752 kWh (or 7% of the brewery's annual energy consumption), annual carbon savings of nearly 1,000 tons, and annual economic savings of US$126,100.

These savings have exceeded the projected savings by more than 20% on an annual basis and by more than 100% in some months. The brewery has been making quarterly payments of US$26,340 in accordance with the terms of the performance contract.

Participants and Roles

Empresas ESM SA de CV was the project developer; EIC provided subordinated debt financing, financial advisory services, and technical services related to GHG emissions; and CCM was the "host" facility that benefited from the energy-efficiency improvements.



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